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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,789

07/18/2007

Soo Jin Chua

4276-109

7149

23448

7590

11/24/2010

INTELLECTUAL PROPERTY / TECHNOLOGY LAW

PO BOX 14329

RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

FRITCHMAN, REBECCA M

ART UNIT

PAPER NUMBER

1777

MAIL DATE

DELIVERY MODE

11/24/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/594,789	<b>Applicant(s)</b> CHUA ET AL.	
	<b>Examiner</b> REBECCA FRITCHMAN	<b>Art Unit</b> 1777	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 37,38,40,41 and 43-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 37,38,40,41 and 43-72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

***Detailed Action  
Summary***

This is a Final Office action based on the 10/594789 application attorney response filed 09/13/2010.

Claims 37-38, 40-41, & 43-72 are pending and have been fully considered.

Claims 1-36, 39, 42, 63 and 66 have been cancelled.

***Claim Rejections - 35 USC § 102***

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. **Claims 37, 38, 40, 41, 43, 45- 47, 49, 50-54, & 70-71 are rejected under U.S.C. 102(a) as being anticipated by GRAFF in PCT/US03/13235(as cited on IDS dated 01/15/2007).**

With respect to Claims 37, 49, 68, 70, & 71, GRAFF et al. teach of a multi-layer barrier coating on a flexible substrate which comprises alternating polymer and inorganic layers (abstract). Specifically, GRAFF et al. teach of and electrically conductive sensing element (OLED or light emitting polymer, conductive polymer(0049), which decompose rapidly upon exposure to gas-oxygen- and liquids)(paragraph 0003, Fig 1B, 50), two electrodes( Fig 1B, 52 & 54) electrically connected to the sensing element, a base substrate supporting the sensing element(Fig 1 B, 12), and a liner layer disposed between the sensing element and the base substrate comprising an organic polymer or inorganic polymer(PET)(paragraph 0005, Fig 1 B, 20 & 30). GRAFF et al. also teach of calculation of oxygen(gas) permeability paragraph 0004 & 0005).

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With respect to Claim 38, GRAFF et al. teach of signal evaluation (display) (paragraph 0004).

With respect to Claim 40, GRAFF et al. teach of the oxygen-sensitive material being(paragraph 0004).

With respect to Claim 41, GRAFF et al. teach of the use of polyester (0014, 0037, & 0051).

With respect to Claims 43 & 45, GRAFF et al. teach of the electrode being a metal(tin) oxide(paragraph 0004).

With respect to Claims 46 & 47, GRAFF et al. teach of the substrate being a polymeric material(PET)(0004).

With respect to Claim 50, GRAFF et al. teach of the barrier layer being metal oxides(paragraph 0016).

With respect to Claims 51, 52, & 53, GRAFF et al. teach of the electrodes(52 & 54) being located on a surface of the substrate & being spaced apart thereby forming a trench and the sensing element(50) being located in the trench(Figure 1B).

With respect to Claim 54, GRAFF et al. teach of an encapsulation (56) enclosing the sensing element(50)(Figure 1B).

2. **Claims 44, 48, 51-62, 64, 65, 67, 69, & 72 are rejected under U.S.C. 103(a) as being obvious over GRAFF in PCT/US03/13235(as cited on IDS dated 01/15/2007) in view of TAKAHASHI in US 4595485.**

With respect to Claim 44, GRAFF et al. teach of a multi-layer barrier coating on a flexible substrate for an environmentally(oxygen) sensitive device which comprises alternating polymer and inorganic layers (abstract). GRAFF et al. do not specifically teach of the electrodes in connection with the device being silver. TAKAHASHI et al. however teach of the electrode being silver (Claim 8). It would have been obvious to one of ordinary skill in the art to use a silver electrode as in TAKAHASHI in the device of GRAFF due to the fact that electrode material selection is specific and must allow oxygen to moved through the substrate (column 7, lines 50-58).

With respect to Claim 48, TAKHASHI teach of the use of a Silicon based substrate (column 9, lines 24-25).

With respect to Claim 51, TAKAHASHI et al. teach of the electrodes being located on the surface of the substrate (Claims 16 & 31).

With respect to Claim 52, TAKAHASHI et al. teach of the electrodes being spaced apart and therefore forming a trench (Claim 13).

With respect to Claim 53, TAKAHASHI et al. teach of the sensing element being located in the trench (Claims 15 & 16).

With respect to Claim 54, TAKAHASHI et al. teach of a dense coating layer encapsulating the sensing element (Claim 17).

With respect to Claim 55, TAKAHASHI et al. teach of the porous coating comprising polymeric material, silicon compounds (Claim 11).

With respect to Claim 56, TAKAHASHI et al. teach of a hollow cylindrical base which contains a sensing element (column 10, lines 45-56).

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With respect to Claim 57, TAKAHASHI et al. do not teach of the hollow space being filled with inert gas, however, it would be obvious to one of ordinary skill to fill this space with inert gas to prevent complications in the oxygen sensing reaction.

With respect to Claim 58, TAKAHASHI et al. teach that it is commonly known to use a cover over the sensing element (column 1, lines 20-31).

With respect to Claim 59, TAKAHASHI et al. do not teach of the cover substrate comprising glass, aluminum, or copper, however, it would have been obvious to one of ordinary skill in the art to use one of these materials due to the fact that they would be un-reactive.

With respect to Claim 60, TAKAHASHI et al. teach of the whole element being covered by a porous coating as a protective mechanism (column 5, lines 27-41).

With respect to Claim 61, TAKAHASHI et al. teach of the porous coating/protective layer being silicon or aluminum oxide (Claim 11).

With respect to Claim 62, TAKAHASHI et al. teach of the porous coating/protective layer being silicon or aluminum oxide (Claim 11). TAKAHASHI et al. do not teach of the protective coating being a metal fluoride, however, this is an equivalent material to a metal oxide for its use as a protective layer.

With respect to Claims 64, 65, & 67, TAKAHASHI et al. teach of the insulating (liner layer) comprising SiO<sub>2</sub>.

With respect to Claim 69, TAKAHASHI et al. teach of the electrodes being located on the surface of the substrate (Claims 16 & 31).

With respect to Claim 72, it would be obvious to one of ordinary skill in the art to measure noise, in order to obtain a clearer signal.

### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to REBECCA FRITCHMAN whose telephone number is (571)270-5542. The examiner can normally be reached on Monday- Friday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim, Vickie can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

R.F.

/Krishnan S Menon/

Primary Examiner, Art Unit 1777